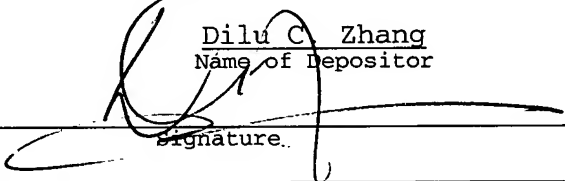IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s):   Wu et al.

Title: ADAPTIVE TRANSMIT DIVERSITY WITH QUADRANT PHASE
CONSTRAINING FEEDBACK

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INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
PO Box 1450
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Pursuant to 37 C.F.R. §1.56(a), Applicant hereby cites the
following documents (copies enclosed) listed on the attached copy
of Form PTO-1449.

This Information Disclosure Statement is filed in accordance with the paragraph of 37 CFR §1.97 checked below:

<u>X</u> 1.97(b) This Information Disclosure Statement is filed:

        (1) Within three months of the filing date of a national application; OR

        (2) Within three months of the date of entry of the national stage of an international application; OR

        (3) Before the mailing of a first Office Action on the merits.

    No fee or certification is required.

__ 1.97(c) This Information Disclosure Statement is filed after the period specified in paragraph (b) above, but before the mailing date of either:

        (1) A Final Action under 37 CFR 1.113; OR

        (2) A Notice of Allowance under 37 CFR 1.311;

AND is accompanied by either:
(check one)

_____ the Certification under 37 CFR
1.97(e) as set out below; OR

_____ the fee of $240.00 under 37 CFR
1.17(p).

__ 1.97(d)   This Information Disclosure Statement is filed
after the mailing date of either:

(1)   a Final action under 37 CFR 1.113; OR

(2)   A Notice of Allowance under 37 CFR 1.311;

BUT before payment of the Issue Fee, AND is accompanied
by:

(1)   the Certification under 37 CFR 1.97(e) as
set out below; AND

(2)   Petition is hereby made under 37 CFR
1.97(d) for consideration of this
Information Disclosure Statement; AND,

(3)   Authorization to charge the petition fee
of $130.00 as set out in 37 CFR 1.17(i).

If this Information Disclosure Statement is being filed
under 37 CFR 1.97(c) or 1.97(d), the undersigned Attorney hereby

certifies that:

    __   each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of this Statement;

or

    __   no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, or to the knowledge of the undersigned Attorney after making reasonable enquiry, was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing date of this Statement.

Authorization is hereby given to charge the indicated fee(s) to Deposit Account No. 50-0749.

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Respectfully submitted,

MITSUBISHI ELECTRIC RESEARCH LABORATORIES

By: _____

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Enclosures

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Form PTO-1449 (modified 2/91)	U.S. DEPT OF COMMERCE Patent and Trademark Office	Attorney Docket Number: MERL-1489	Serial Number:
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		Applicant: Wu et al.	
		Filing date: Herewith	Group art area:

U.S. PATENT DOCUMENTS

Examiner Initial	Patent number	Date	Name	Class	Subclass	Filing date if appropriate

FOREIGN PATENT DOCUMENTS

	Document number	Date	Country	Class	Subclass	Translation YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

1.	S.M. Alamouti, "A simple transmit diversity technique for wireless communications," *IEEE J. Select. Area Commun.*, vol.16, pp.1451-1458, Oct. 1998.
2.	V. Tarokh, H. Jafarkhani, and A.R. Calderbank, "Space-time block codes from orthogonal designs," *IEEE Trans. Info. Theory*, vol.45, pp.1456-1467, Jul. 1999.
3.	Y. Xin, Z. Wang, and G.B. Giannakis, "Space-time diversity systems based on linear constellation precoding," *IEEE Trans. Wireless Commun.*, vol.2, pp.294-309, Mar. 2003.
4.	S. Zhou, G.B. Giannakis, "Optimal transmitter eigen-beamforming and space-time block coding based on channel mean feedback," *IEEE Trans. Signal Processing*, vol.50, pp.2599-2613, Oct. 2002.
5.	J.H. Horng, L. Li, and J. Zhang, "Adaptive space-time transmit diversity for MIMO systems," in *Proc. IEEE Veh. Techno. Conf. VTC'03 Spring*, pp.1070-1073, Apr. 2003.
6.	M.K. Simon, and M.-S. Alouini, "A unified approach to the performance analysis of digital communication over generalized fading channels," *Proc. of IEEE*, vol.86, pp.1860-1877, Sep. 1998.

Examiner:	Date Considered:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP .609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.